

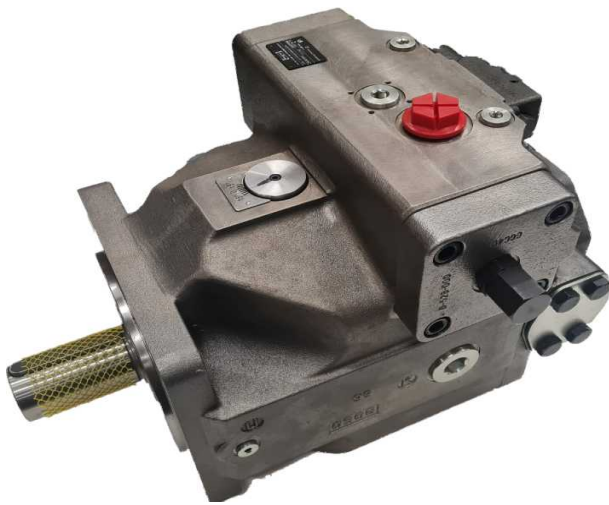
A4VSO Pump

Series: 10
Nominal pressure 5100 psi (350 bar) Peak pressure 5800 psi (400 bar)

Model A4VSO71 A4VSO125 A4VSO180 A4VSO250 A4VSO355 A4VSO500 A4VSO750

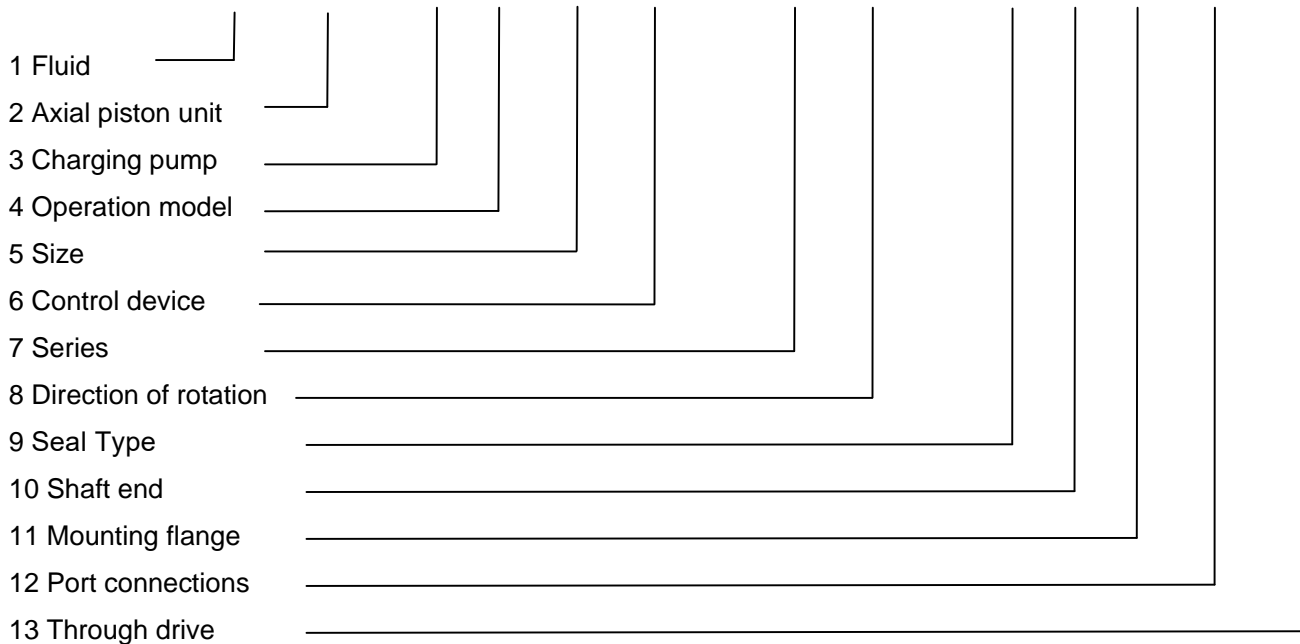
Features:

- Swash plate design
- Infinitely variable displacement
- Good self priming suction characteristics
- Continuous operating pressure of 5100 psi (350 bar)
- Low noise level
- Low power to weight ratio
- Drive shaft able to accept axial and radial loading
- Excellent service life
- Compact modular design
- Short control times
- Over-center design (swallow circuits)
- Through drive and pump combinations possible
- Swivel angle indicator standard
- Installation positional optional



Ordering code:

H	(A)A4VS		O	355	DR	/	30	R	--	P	P	B	13	NOO
1	2	3	4	5	6		7	8		9	10	11	12	13



More explanation:

- 1- Fluid: Blank= Mineral oil , E= HFA-, HFB- and HFC-Fluids. H= High-Speed-Version.
- 2- Version: AA4VS = SAE version, Swash plate design, variable
A4VS= Metric version, Swash plate design, variable
- 3- Axial piston unit: Blank= Without charging pump, L= With impeller, only for port option 25
- 4- Operation model: Pump, open circuit
- 5- Size: displacement 71, 125, 180, 250, 355, 500, 750, 1000 (cm³/rev.)
- 6- Control device: DR=Constant pressure control
DRG= Remote control
FR=Flow control
DFR= Pressure and flow control
LR=Const. Power control with hyperbolic curve
MA=Manual control
EO=Electric control
HD=Hydraulic control, pilot pressure dependent
EM= Electric motor control
HM= Hydraulic control, control volume dependent
HS= Hydraulic control, with servo/ proportional valve
DS= Secondary speed control
- 7- Series: 10, 22, 30
- 8- Direction of rotation: R= right. L= left (Viewed on shaft end)
- 9- Seals: P= NBR (Nitrile rubber to DIN ISO 1629) with shaft seal FPM
V= FPM (Fluoride rubber to DIN ISO 1629)
- 10- Shaft end: P= Metric Parallel with key to DIN 6885
Z= Metric splined shaft per DIN 5480
- 11- Mounting flange : B= ISO 4-bolt. D= SAE 4-bolt. H= ISO 8-bolt
- 12- Port connections : 13= Connections B and S: SAE on side 90°offset, metric mounting bolts, screw
25= Connections B and S: SAE on side 90° offset, metric mounting bolts, flange
- 13- Through drive: N00= Without thru drive, without auxiliary pump
K31= ISO 125, 4-hole, Splined shaft 32x2x30x14x9g, to accept: A4VSO/H/G 40
K33= ISO 140, 4-hole, Splined shaft 40x2x30x18x9g, to accept: A4VSO/H/G 71
K34= ISO 160, 4-hole, Splined shaft 50x2x30x24x9g, to accept: A4VSO/H/G 125
K34= ISO 160, 4-hole, Splined shaft 50x2x30x24x9g, to accept: A4VSO/G 180
K35= ISO 224, 4-hole Splined shaft 60x2x30x28x9g, to accept: A4VSO/H/G 250
K77= ISO 224, 4- hole Splined shaft 70x3x22x9g, to accept: A4VSO/G, A4CSG 355
K43= ISO 315, 8- hole Splined shaft 80x3x25x9g, to accept: A4VSO/G, A4CSG 500
KB2= ISO 80, 2- hole Splined shaft 3/4in 19-4 (SAE A-B) A10VSO 10/52, 18/31
KB3= ISO 100, 2- hole Splined shaft 7/8in 22-4 (SAE B) A10VSO 28/31
KB4= ISO 100, 2- hole Splined shaft 1in 25-4 (SAE B-B) A10VSO 45/31
KB5= ISO 125, 2- hole Splined shaft 1 1/4in 32-4 (SAE C) A10VSO 71/31
KB6= ISO 125, 2- hole Splined shaft 1 1/2in 38-4 (SAE C-C) A10VSO 100/31
KB7= ISO 180, 4-hole Splined shaft 1 13/4in 44-4 (SAE D) A10VSO 140/31
K01= 82-2(SAE A), 2-hole, Splined shaft 5/8in 16-4 (SAE A)
K52= 82-2(SAE A), 2-hole Splined shaft 3/4in 19-4 (SAE A-B) A10VSO 10, 18/31
K68= 101-2 (SAE B) Splined shaft 7/8in 22-4 (SAE B) A10V(S)O 28/31
K04= 101-2 (SAE B) 1in 25-4 (SAE B-B), A10V(S)O45/31
K99= With through drive shaft, without hub, without adapter flange, with cover plate

Technical data

Hydraulic fluid

For extensive information on the selection of hydraulic fluids and application conditions please consult our data sheets RA 90220 (mineral oils), RA 90221 (ecologically acceptable fluids) and RA 90223 (HF-fire-resistant fluids).

The variable pump (A)A4VSO is suitable for operation on HF-fluids. (HFA, HFB, and HFC: **EA4VSO** or **A4VSO...F** HFD: standard version A4VSO with FKM seals)
However, limitations to the technical data, according to RA 90223 must be observed.

On certain selected HFC-fluids, pump sizes 125...355, executed in accordance to RA 92053 can be operated with the same pressures and speeds as on mineral oil.

On operation with HFA and HFB-fluids, limitations of the technical data must be observed according to RA 90223.
On operation with rolling oil (e.g. kerosene + additives) please consult us.

When ordering, please state the fluid to be used.

Operating viscosity range

Within the operating viscosity range between 80...450 SUS (16...100 mm²/s) the units can be operated without limitations of the technical data.

In order to obtain optimum efficiency and service life, we recommend that the operating viscosity (at operating temperature) be selected in the range

$$v_{opt} = \text{opt. viscosity range } 80...170 \text{ SUS } (16...36 \text{ mm}^2/\text{s})$$

referred to tank temperature (open circuit).

Limit of viscosity range

For critical operating conditions the following values apply:

$$v_{min} = 60 \text{ SUS } (10 \text{ mm}^2/\text{s})$$

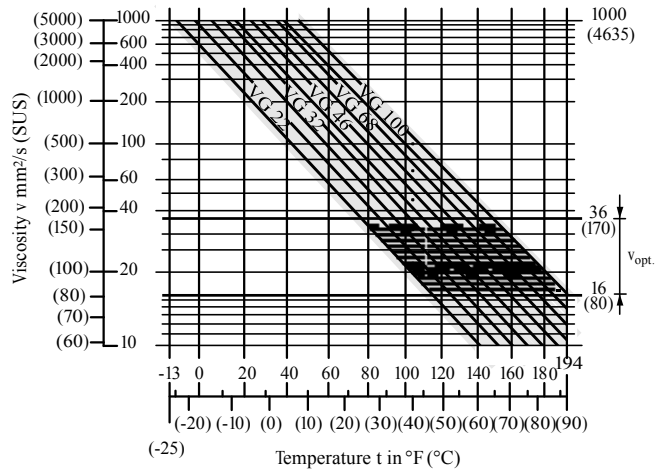
for short periods ($t < 3 \text{ min}$)
at max. permissible case drain temperature
 $t_{max} = 194^\circ\text{F } (+90^\circ\text{C})$.

$$v_{max} = 4550 \text{ SUS } (1000 \text{ mm}^2/\text{s})$$

for short periods (on cold start, operating viscosity should be below 450 SUS (100 mm²/sec) within 15 minutes)
 $t_{min} = -13^\circ\text{F } (-25^\circ\text{C})$

For detailed information on operation with low temperatures see RA 90300-03-B.

Selection diagram



Notes on the selection of hydraulic fluid

In order to select the correct fluid, it is necessary to know the operating temperature in the tank (open circuit) in relation to the ambient temperature.

The hydraulic fluid should be selected so that within the operating temperature range, the viscosity lies within the optimum range (v_{opt}); see shaded section in the selection diagram. We recommend, that the higher viscosity grade is selected in each case.

Temperature range (see selection diagram)

$$t_{min} = -13^\circ\text{F } (-25^\circ\text{C})$$

$$t_{max} = 194^\circ\text{F } (+90^\circ\text{C})$$

Example: at an ambient temperature of $X^\circ\text{C}$ the operating temperature in the tank is $140^\circ\text{F } (60^\circ\text{C})$. In the optimum viscosity range (v_{opt} ; shaded area), this corresponds to grades VG 46 or VG 68; select: VG 68.

Important: The case drain temperature is influenced by pressure and speed and is always higher than the tank temperature. However the max. temperature at any point in the system may not exceed $194^\circ\text{F } (90^\circ\text{C})$.

Technical data

Bearing flushing

For the following operating conditions bearing flushing is required for a safe, continuous operation:

- Applications with special fluids (non mineral oils) due to limited lubricity and narrow operating temperature range
- Operation at critical conditions of temperature and viscosity with mineral oil

Flushing is recommended with vertical mounting (drive shaft facing upwards) in order to ensure lubrication of the front bearing and shaft seal.

Flushing is carried out via port „U“, located in the front flange area of the pump. The flushing fluid flows through the front bearing and leaves the pump together with the case drain flow.

Depending on pump size, the following flushing flows are recommended:

Size	40	71	125	180	250
recommended flushing flow q_{Sp} (L/min)	0.8 (3)	1.0 (4)	1.3 (5)	1.8 (7)	2.6 (10)

Size	355	500	750	1000
recommended flushing flow q_{Sp} (L/min)	4.0 (15)	5.3 (20)	7.9 (30)	10.6 (40)

These recommended flushing flows will cause a pressure drop of approx. 30 psi (2 bar) (series 1) and 45 psi (3 bar) (series 3) between the entrance to port „U“ and the pump case (including the pipe fittings).

Notes regarding series 30

When using external bearing flushing the throttle screw at port U must be turned in to the end stop.

Filtration of the fluid (Axial piston unit)

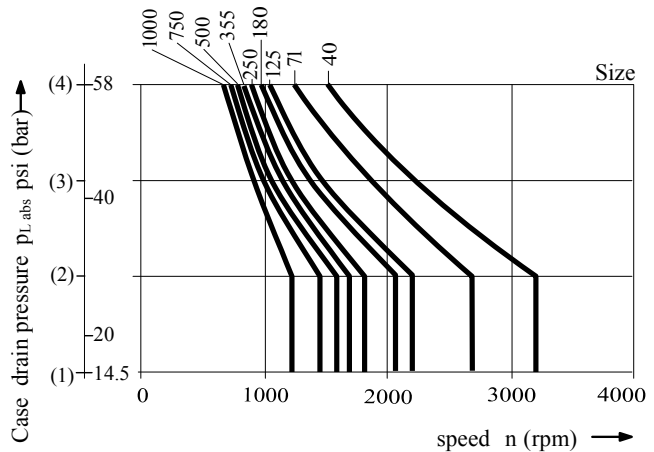
The finer the filtration, the better the achieved cleanliness of the fluid and the longer the life of the axial piston pump.

To ensure a reliable functioning of the axial piston unit, a minimum cleanliness class of

20/18/15 acc. to ISO 4406 is necessary.

Case drain pressure

The permissible case drain pressure (housing pressure) is dependent on the drive speed (see diagram).



Max. case drain pressure (housing pressure)

$p_{L,abs max}$ _____ 60 psi (4 bar) absolute

These are approximate values; under certain operating conditions a reduction in these values may be necessary.

Technical data

Operating pressure range

Pressure at service line port (pressure port) B

Nominal pressure p_{nom} _____ 5100 psi (350 bar) absolute

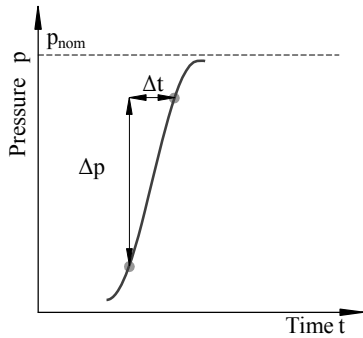
Peak pressure p_{max} _____ 5800 psi (400 bar) absolute

Total operating period _____ 300 h

Single operating period _____ 1 s

Minimum pressure (high-pressure side) ___215 psi (15 bar)
For lower pressures please consult us.

Rate of pressure change R_A ___ 232000 psi/s (16000 bar/s)



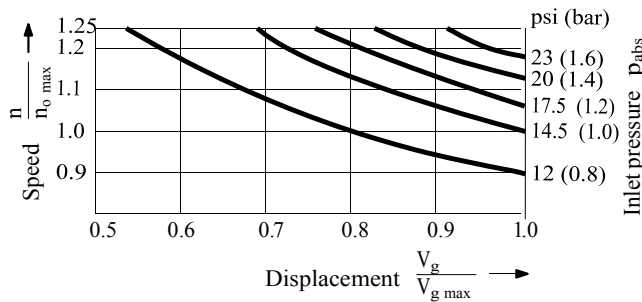
Pressure at suction port S (inlet)

Minimum suction pressure $p_{S min}$ ___ 12 psi (0,8 bar) absolute

Maximum suction pressure $p_{S max}$ ___ 435 psi (30 bar) absolute

Minimum pressure (inlet)

In order to avoid damage to the axial piston unit, a minimum pressure must be ensured at the suction port S (inlet). The minimum pressure is dependent on the speed and displacement of the axial piston unit.



The inlet pressure is the static feed pressure or the minimum dynamic value of the boost pressure.

Please note:

Max. permissible drive speed $n_{o max, perm.}$ (speed limit) see page 8

Please contact us if these conditions cannot be satisfied.

Definition

Nominal pressure p_{nom}

The nominal pressure corresponds to the maximum design pressure.

Peak pressure p_{max}

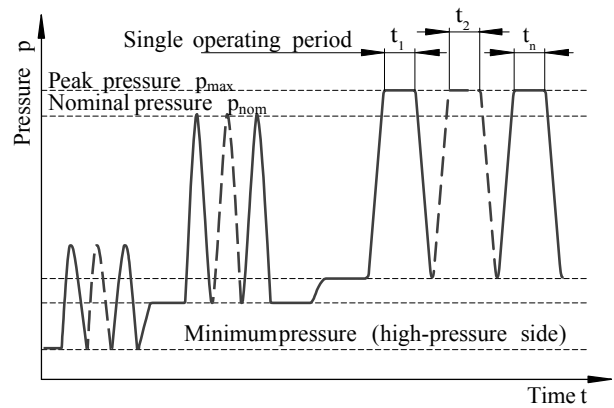
The peak pressure corresponds to the maximum operating pressure within the single operating period. The sum of the single operating periods must not exceed the total operating period.

Minimum pressure (high-pressure side)

Minimum pressure on the high-pressure side (B) that is required in order to prevent damage to the axial piston unit.

Rate of pressure change R_A

Maximum permissible rate of pressure build-up and pressure reduction during a pressure change over the entire pressure range.



Total operating period = $t_1 + t_2 + \dots + t_n$

Technical data

Table of values (theoretical values, without considering efficiencies and tolerances; values rounded off)

Size			40	71	125	180	250/ H ¹⁾	355/ H ¹⁾	500/ H ¹⁾	750	750 with boost pump	1000
Displacement	$V_{g \max}$	in ³ (cm ³)	2.44 (40)	4.33 (71)	7.63 (125)	11.0 (180)	15.26 (250)	21.7 (355)	30.51 (500)	45.8 (750)	45.8 (750)	61.02 (1000)
Speed ²⁾												
max. at $V_{g \max}$	$n_{o \max}$	rpm	2600	2200	1800	1800	1500/ 1900	1500/ 1700	1320/ 1500	1200	1500	1000
max. at $V_g \leq V_{g \max}$ (speed limit)	$n_{o \max \text{perm}}$	rpm	3200	2700	2200	2100	1800/ 2100	1700/ 1900	1600/ 1800	1500	1500	1200
Flow												
at $n_{o \max}$	$q_{vo \max}$	gpm (L/min)	27.5 (104)	41.2 (156)	59.4 (225)	85.6 (324)	99/ 125 (375/ 475)	140/ 159 (533/ 604)	174/ 198 (660/ 750)	237.9 (900)	297.2 (1125)	264.1 (1000)
Power $\Delta p = 5100$ psi (350 bar)												
at $n_{o \max}$	$P_{o \max}$	HP (kW)	81 (61)	122 (91)	176 (131)	254 (189)	294/ 372 (219/ 277)	417/ 473 (311/ 352)	518/ 587 (385/ 437)	708 (525)	885 (656)	781 (583)
Torque												
at $V_{g \max}$ $\Delta p = 5100$ psi (350 bar) T_{max}		lb-ft (Nm)	165 (223)	292 (395)	516 (696)	744 (1002)	1032 (1391)	1467 (1976)	2063 (2783)	3097 (4174)	3097 (4174)	4104 (5565)
$\Delta p = 1450$ psi (100 bar) T		lb-ft (Nm)	47 (64)	83 (113)	147 (199)	211 (286)	294 (398)	417 (564)	586 (795)	880 (1193)	880 (1193)	1172 (1590)
Rotary stiffness												
Shaft end K	c	klb-ft/rad (kNm/rad)	57 (79)	106 (146)	175 (241)	235 (323)	322 (443)	592 (814)	–	–	–	–
Shaft end S	c	klb-ft/rad (kNm/rad)	49 (67)	92 (126)	141 (194)	202 (278)	267 (368)	–	–	–	–	–
Shaft end R	c	klb-ft/rad (kNm/rad)	–	–	–	–	–	345 (475)	–	–	–	–
Shaft end P	c	klb-ft/rad (kNm/rad)	–	–	–	–	–	–	832 (1145)	1352 (1860)	1352 (1860)	1985 (2730)
Shaft end Z	c	klb-ft/rad (kNm/rad)	–	–	–	–	–	–	826 (1136)	1317 (1812)	1317 (1812)	2068 (2845)
Moment of inertia rotary group	J_{TW}	lb-ft ² (kgm ²)	0.116 (0.0049)	0.287 (0.0121)	0.712 (0.03)	1.305 (0.055)	2.276 (0.0959)	4.509 (0.19)	7.809 (0.3325)	15.66 (0.66)	15.66 (0.66)	28.47 (1.20)
Angular acceleration max. ⁴⁾	α	rad/s ²	17000	11000	8000	6800	4800	3600	2800	2000	2000	1450
Case volume	V	gal (L)	0.5(2)	0.6(2.5)	1.3(5)	1.0(4)	2.6(10)	2.1(8)	3.7(14)	5.0(19)	5.8(22)	7.13(27)
Weight (with pressure control) approx.	m	lbs (kg)	86 (39)	117 (53)	194 (88)	225 (102)	406 (184)	456 (207)	705 (320)	1014 (460)	1080 (490)	1333 (605)

1) High-Speed-Version

2) Values are valid with inlet pressure p_{abs} 14.5 psi (1 bar) at inlet port S, with increased speed up to speed limit please observe diagram, page 7

3) $V_g < V_{g \max}$

4) – The range of validity lies between zero and the maximum permissible drive speeds.

Valid for external excitation (eg. diesel engine 2- to 8-fold rotary frequency, cardan shaft 2-fold rotary frequency).

– The limiting value is only valid for a single pump.

– The loading capacity of the connecting parts must be considered.

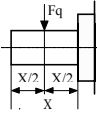
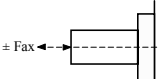
Notes

Exceeding the maximum or falling below the minimum permissible values can lead to a loss of function, a reduction in operational service life or total destruction of the axial piston unit.

The permissible values can be determined through calculation.

Technical data

Permissible radial and axial forces on the drive shaft

Size		40	71	125	180	250	355	500	750*	1000	
Radial force, max.	 at X/2 $F_{q\ max}$	lb (N)	225 (1000)	270 (1200)	360 (1600)	450 (2000)	450 (2000)	495 (2200)	560 (2500)	675 (3000)	786 (3500)
Axial force, max.	 $\pm F_{ax\ max}$	lb (N)	135 (600)	180 (800)	225 (1000)	315 (1400)	405 (1800)	450 (2000)	450 (2000)	495 (2200)	495 (2200)

* also valid for versions with boost pump

Determination of pump size

Flow $q_v = \frac{V_g \cdot n \cdot \eta_v}{231} \text{ [gpm]} \left(\frac{V_g \cdot n \cdot \eta_v}{1000} \text{ [L/min]} \right)$

Drive torque $T = \frac{V_g \cdot \Delta p}{24 \cdot \pi \cdot \eta_{mh}} \text{ [lb-ft]} \left(\frac{V_g \cdot \Delta p}{20 \cdot \pi \cdot \eta_{mh}} \text{ [Nm]} \right)$

Power $P = \frac{q_v \cdot \Delta p}{1714 \cdot \eta_t} \text{ [HP]} \left(\frac{q_v \cdot \Delta p}{600 \cdot \eta_t} \text{ [kW]} \right)$

V_g = geometr. displacement per rev. in in^3 (cm^3)

Δp = pressure difference in psi (bar)

n = speed in rpm

η_v = volumetric efficiency

η_{mh} = mechanical-hydraulic efficiency

η_t = overall efficiency ($\eta_t = \eta_v \cdot \eta_{mh}$)

Summary of controls

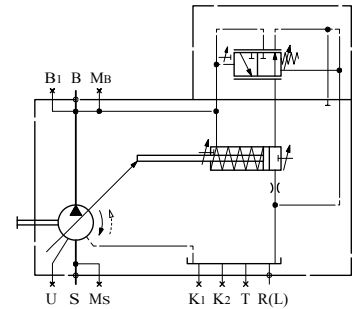
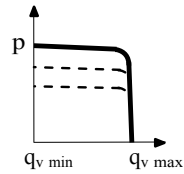
Pressure control DR (see RA 92060)

The DR-pressure control limits the maximum pressure at the pump outlet within the pump's control range. This max. pressure level can be steplessly set at the control valve.

Setting range 725...5100 psi (50...350 bar)

Optional:

Remote control (DRG)

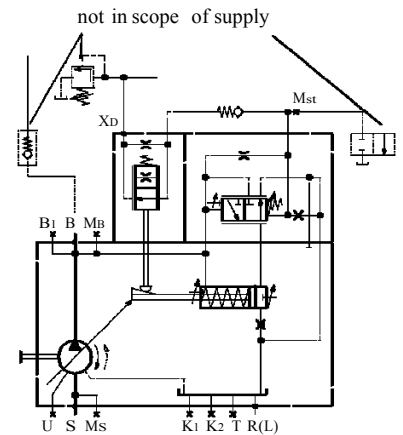
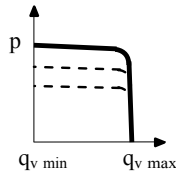


Pressure control for parallel operation DP (see RA 92060)

Suitable for pressure control with multiple A4VSO axial piston pumps in parallel operation.

Optional:

Flow control (DPF)



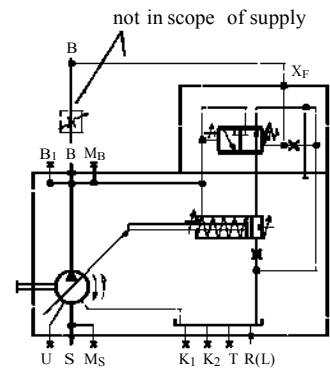
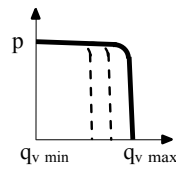
Flow control FR (see RA 92060)

Maintains a constant flow in a hydraulic system.

Optional:

Remote pressure control (FRG)

connection between X_F and tank closed (FR1, FRG1)

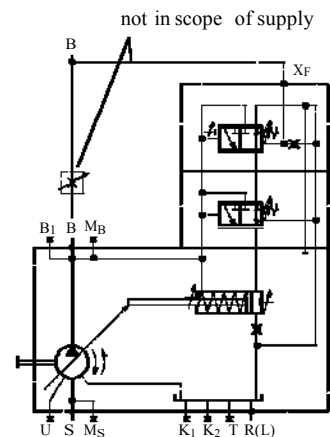
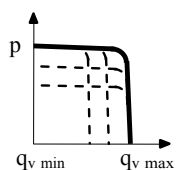


Pressure and flow control DFR (see RA 92060)

This control maintains a constant flow from the pump even under varying operating conditions. Overriding this control is a mechanically adjustable pressure control.

Optional:

connection between X_F and tank closed (DFR1)



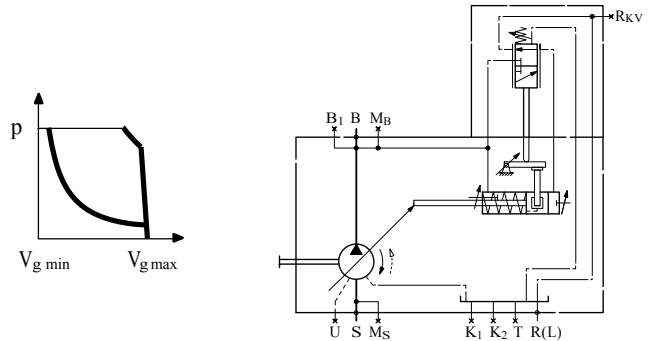
Summary of controls

Power control LR2 with hyperbolic characteristic (see RA 92064)

The hyperbolic power control maintains a constant preset drive power at the same input speed.

Optional:

- Pressure control (LR2D), remotely controlled (LR2G);
- Flow control (LR2F, LR2S);
- Hydraulic stroke limiter (LR2H);
- Mechanical stroke limiter (LR2M);
- Hydraulic two-point control (LR2Z);
- with electric unloading valve for easy start (LR2Y).

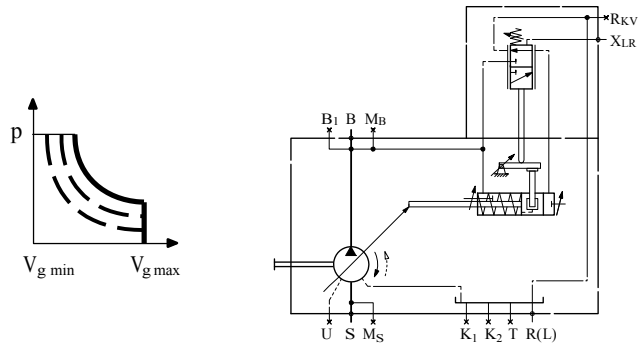


Power control LR3 with remote control of power characteristics (see RA 92064)

This power control maintains a constant preset drive power, with remote control of the power characteristics.

Optional:

- Pressure control (LR3D), remotely controlled (LR3G);
- Flow control (LR3F, LR3S);
- Hydraulic stroke control (LR3H);
- Mechanical stroke control (LR3M);
- Hydraulic two-point control (LR3Z);
- with electric unloading valve for easy start (LR3Y)



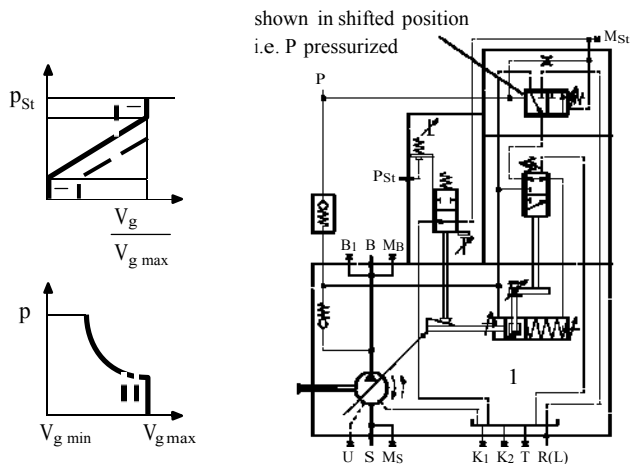
Hydraulic control LR2N and LR3N pilot pressure dependent, initial position $V_{g \min}$ (see RA 92064)

With overriding power control.

The pump displacement is proportional to a pilot pressure signal in P_{St} .
The additional hyperbolic power control overrides the pilot pressure signal and holds the preset drive power constant.

Optional:

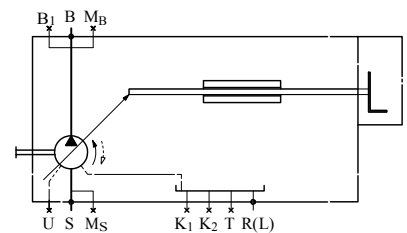
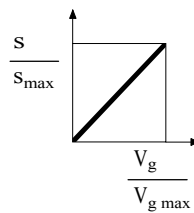
- Remote control of power characteristics (LR3N)
- Pressure control (LR.DN),
- Remote pressure control (LR.GN)
- Electric control of pilot pressure signal (LR.NT)



Summary of controls

Manual control MA (see RE 92072)

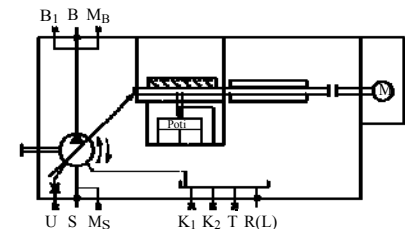
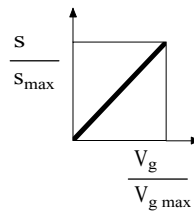
Stepless adjustment of displacement by means of a handwheel.



Electric motor control EM (see RE 92072)

Stepless adjustment of displacement via an electric motor.

Various intermediate displacement values can be selected with a programmed sequence control, by means of built on limit switches and an optional potentiometer for feedback signal.



Hydraulic control HD pilot pressure dependent (see RA 92080)

Stepless adjustment of displacement proportional to a pilot pressure signal. The displacement is proportional to the applied pilot pressure (Difference between pilot pressure level and pump case pressure).

Optional:

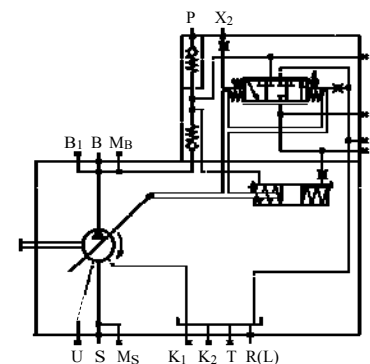
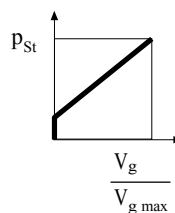
Pilot pressure curves (HD1, HD2, HD3)

Pressure control (HD.B),

Remote pressure control (HD.GB)

Power control (HD1P)

with electric control of pilot pressure (HD1T)



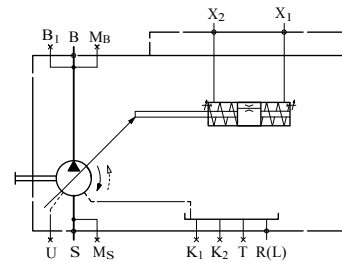
Summary of controls

Hydraulic control HM 1/2, control volume dependent (see RA 92076)

The pump displacement is infinitely variable in relation to the control oil volume in ports X₁ and X₂.

Application:

- 2-point control
- basic control device for servo or proportional valve control

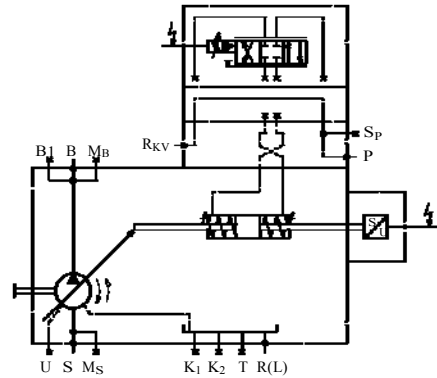
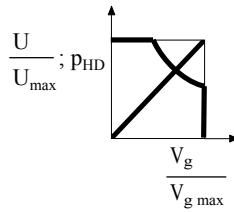


Control system HS, HS4, with servo or proportional valve (see RA 92076)

The stepless displacement control is accomplished by means of servo or proportional valve with electrical feedback of the swivel angle. The HS4P-control system is fitted with a built on pressure transducer so that it can be utilized for electrical pressure and power control.

Optional:

- Servo valve (HS);
- Proportional valve (HS4);
- Short circuit valve (HSK, HS4K, HS4KP);
- Without valves (HSE, HS4E).
- For oil-immersed use (HS4M)

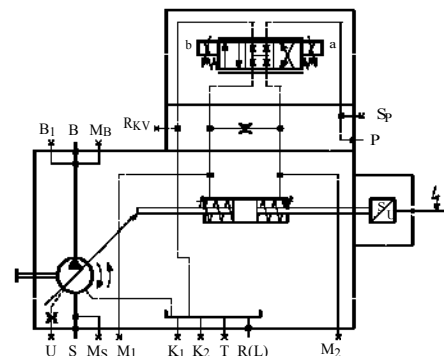
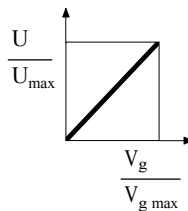


Control system EO1/2 (see RA 92076)

The stepless adjustment of the displacement is accomplished by means of a proportional valve with electrical feedback of the swivel angle. This control can be utilized as an electric control of displacement.

Optional:

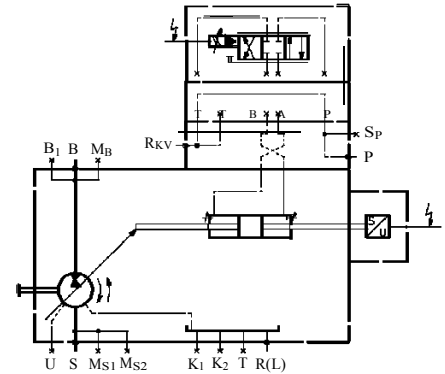
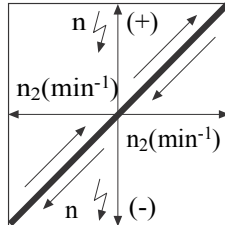
- Control pressure range (EO1, EO2)
- Short circuit valve (EO1K, EO2K)
- Without valves (EO1E, EO2E)



Summary of controls

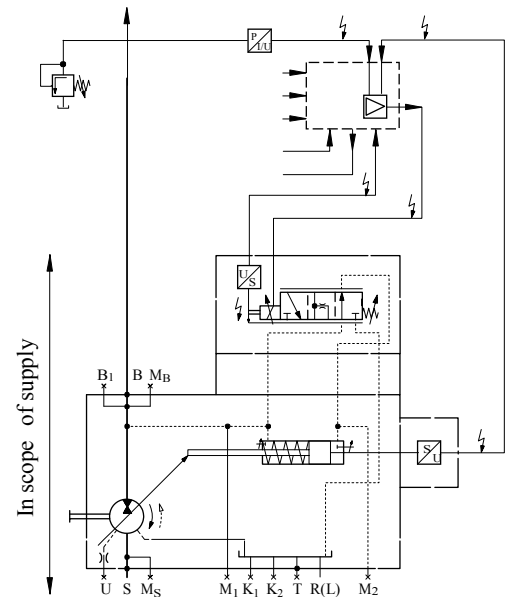
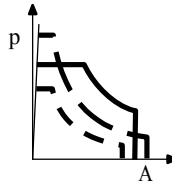
Speed control DS1, secondary controlled (see RE 92056)

The speed control DS1 controls the secondary unit (motor) in such a manner, that this motor delivers sufficient torque to maintain the required output speed. When connected to a constant pressure system, this torque is proportional to motor displacement and thus also proportional to the swivel angle.



Electro hydraulic control system DFE1 (see RE 92088)

The power, pressure and swivel angle control of the variable pump A4VSO...DFE1 is accomplished by means of an electrically controlled proportional valve. A current signal to the proportional valve moves the control piston and determines via an integrated positional transducer the cradle's swivel angle and thus the pump flow. When the electric drive motor is switched off and the system is pressureless, the bias spring in the control chamber will swivel the pump to max. displacement ($V_{g \text{ max}}$).



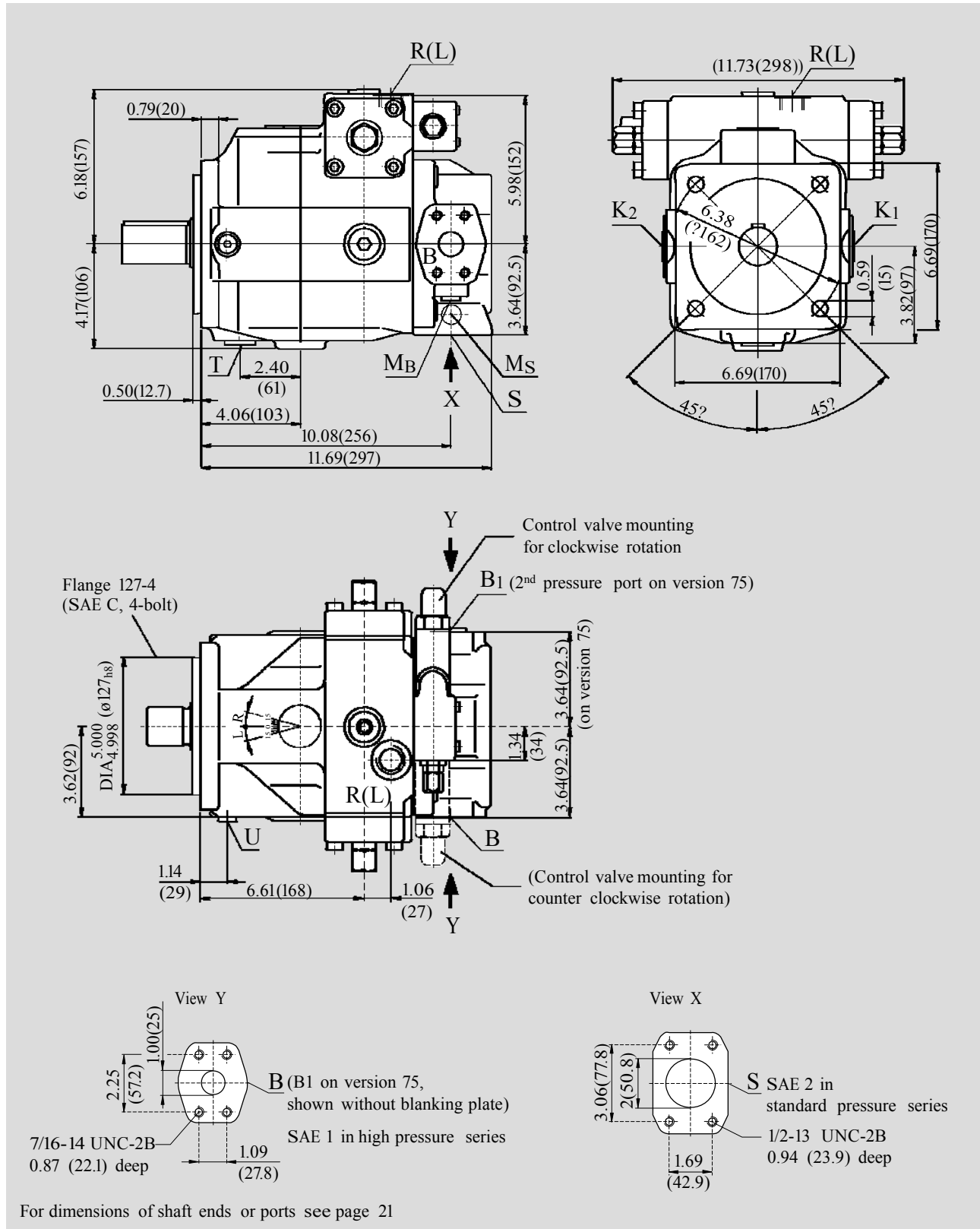
Dimensions, size 71

Before finalising your design please request a certified installation drawing. Dimensions in inches (mm).

Series 1

Example: SAE with N00

pressure control; for exact dimensions of control devices see separate data sheets

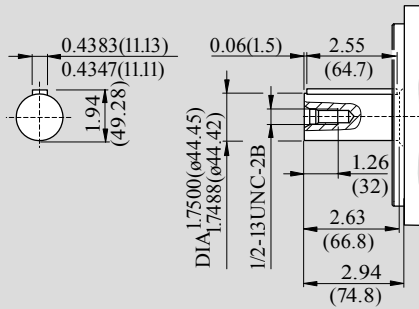


Dimensions, size 125

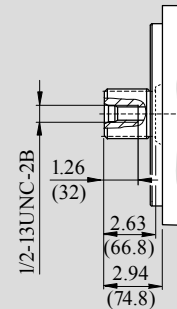
Before finalising your design please request a certified installation drawing. Dimensions in inches (mm).

Shaft ends

K Parallel keyed shaft to ISO 3019-1, SAE D



S Splined shaft to ISO 3019-1, SAE D 44-4, 1 3/4 in, 8/16 DP; 13T¹⁾



Ports

max. tightening torque ²⁾

S	Suction port (standard pressure series)	SAE J518	2 1/2 in	
	Mounting bolts	ISO 68	1/2-13UNC-2B; 1.06(27) deep ²⁾	
K ₁ , K ₂	Flushing port	ISO 11926	1 5/16-12UN-2B; 0.79(20) deep (plugged)	394 lb-ft (540 Nm)
T	Drain	ISO 11926	1 5/16-12UN-2B; 0.79(20) deep (plugged)	394 lb-ft (540 Nm)
M _B	Gauge port outlet pressure	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged)	29 lb-ft (40 Nm)
M _S	Gauge port suction pressure	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged)	29 lb-ft (40 Nm)
R(L)	Fill + air bleed (case drain port)	ISO 11926	1 5/16-12UN-2B; 0.79(20) deep	394 lb-ft (540 Nm)
U	Flushing port	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged)	29 lb-ft (40 Nm)
M ₁ , M ₂	Gauge port control chamber press.	DIN 3852	M14x1.5; 0.47(12) deep (plugged)	29 lb-ft (40 Nm)

on version 63

B	Pressure port (high pressure series)	SAE J518	1 1/4 in	
	Mounting bolts	ISO 68	1/2-13UNC-2B; 1.06(27) deep ²⁾	
B ₁	Additional port	ISO 11926	1 5/16-12UN-2B; 0.79(20) deep (plugged)	394 lb-ft (540 Nm)

on version 75

B	Pressure port (high pressure series)	SAE J518	1 1/4 in	
	Mounting bolts	ISO 68	1/2-13UNC-2B; 1.06(29) deep ²⁾	
B ₁	2 nd pressure port (high pressure series)	SAE J518	1 1/4 in (closed with blanking plate)	
	Mounting bolts	ISO 68	1/2-13UNC-2B; 1.06(29) deep ²⁾	

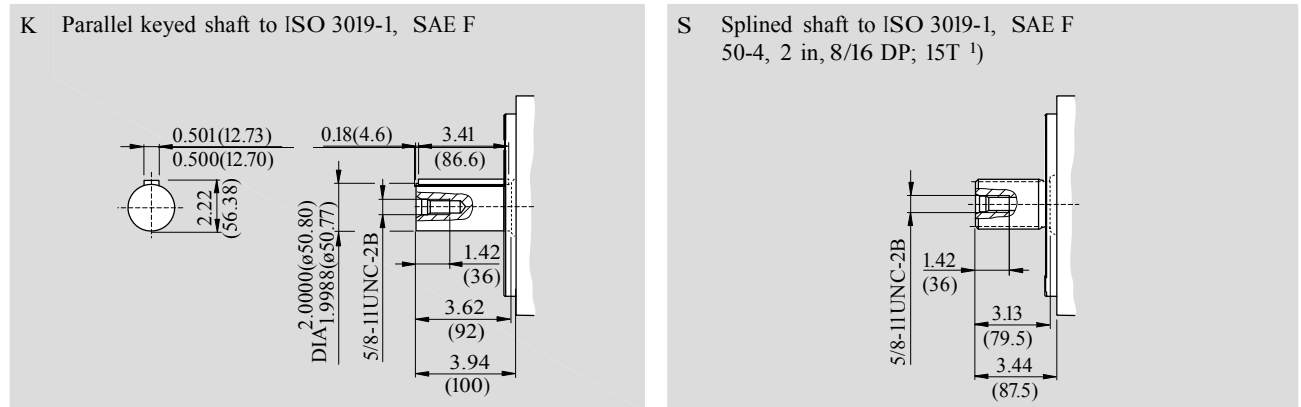
¹⁾ ANSI B92.1a-1976, 30° pressure angle, flat base, flank centering, fit class 5

²⁾ for the max. tightening torques please observe the manufacturer's information on the used fittings and the general information on page 64

Dimensions, size 180, SAE with N00³⁾

Before finalising your design please request a certified installation drawing. Dimensions in inches (mm).

Shaft ends



Ports

max. tightening torque ²⁾

S	Suction port (standard pressure series)	SAE J518	3 in	
	Mounting bolts	ISO 68	5/8-11UNC-2B; 1.14(29) deep ²⁾	
K ₁ , K ₂	Flushing port	ISO 11926	1 5/16-12UN-2B; 0.79(20) deep (plugged)	394 lb-ft (540 Nm)
T	Drain	ISO 11926	1 5/16-12UN-2B; 0.79(20) deep (plugged)	394 lb-ft (540 Nm)
M _B	Gauge port outlet pressure	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged)	29 lb-ft (40 Nm)
M _S	Gauge port suction pressure	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged)	29 lb-ft (40 Nm)
R(L)	Fill + air bleed (case drain port)	ISO 11926	1 5/16-12UN-2B; 0.79(20) deep	394 lb-ft (540 Nm)
U	Flushing port	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged)	29 lb-ft (40 Nm)
M ₁ , M ₂	Gauge port control chamber pressure	DIN 3852	M14x1,5; 0.47(12) deep (plugged)	58 lb-ft (80 Nm)

on version 63

B	Pressure port (high pressure series)	SAE J518	1 1/4 in	
	Mounting bolts	ISO 68	1/2-13UNC-2B; 1.06(27) deep ²⁾	
B ₁	Additional port	ISO 11926	1 5/16-12UN-2B; 0.79(20) deep (plugged)	394 lb-ft (540 Nm)

on version 75

B	Pressure port (high pressure series)	SAE J518	1 1/4 in	
	Mounting bolts	ISO 68	1/2-13UNC-2B; 1.06(27) deep ²⁾	
B ₁	2 nd pressure port (high pressure series)	SAE J518	1 1/4 in (closed with blanking plate)	
	Mounting bolts	ISO 68	1/2-13UNC-2B; 1.06(27) deep ²⁾	

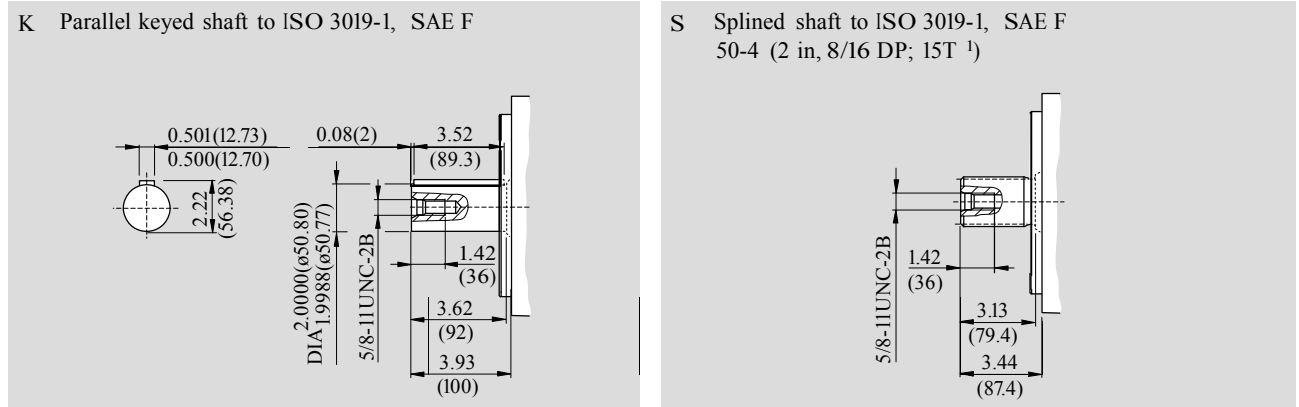
¹⁾ ANSI B92.1a-1976, 30° pressure angle, flat base, flank centering, fit class 5

²⁾ for the max. tightening torques please observe the manufacturer's information on the used fittings and the general information on page 64

Dimensions, size 250

Before finalising your design please request a certified installation drawing. Dimensions in inches (mm).

Shaft ends



Ports

max. tightening torque ²⁾

S	Suction port (standard pressure series)	SAE J518	3 in	
	Mounting bolts	ISO 68	5/8-11UNC-2B; 1.14(29) deep ²⁾	
K ₁ , K ₂	Flushing port	ISO 11926	1 5/8-12UN-2B; 0.79(20) deep (plugged)	700 lb-ft (960 Nm)
T	Drain	ISO 11926	1 5/8-12UN-2B; 0.79(20) deep (plugged)	700 lb-ft (960 Nm)
M _B	Gauge port outlet pressure	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged)	29 lb-ft (40 Nm)
M _S	Gauge port suction pressure	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged)	29 lb-ft (40 Nm)
R(L)	Fill + air bleed (case drain port)	ISO 11926	1 5/8-12UN-2B; 0.79(20) deep	700 lb-ft (960 Nm)
U	Flushing port	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged)	29 lb-ft (40 Nm)
M ₁ , M ₂	Gauge port control chamber pressure	DIN 3852	M18x1,5; 0.47(12) deep (plugged)	102 lb-ft (140 Nm)

on version 63

B	Pressure port (high pressure series)	SAE J518	1 1/2 in	
	Mounting bolts	ISO 68	5/8-11UNC-2B; 1.14(29) deep ²⁾	
B ₁	Additional port	ISO 11926	1 5/8-12UN-2B; 0.79(20) deep (plugged)	700 lb-ft (960 Nm)

on version 75

B	Pressure port (high pressure series)	SAE J518	1 1/2 in	
	Mounting bolts	ISO 68	5/8-11UNC-2B; 1.14(29) deep ²⁾	
B ₁	2 nd pressure port (high pressure series)	SAE J518	1 1/2 in (closed with blanking plate)	
	Mounting bolts	ISO 68	5/8-11UNC-2B; 1.14(29) deep ²⁾	

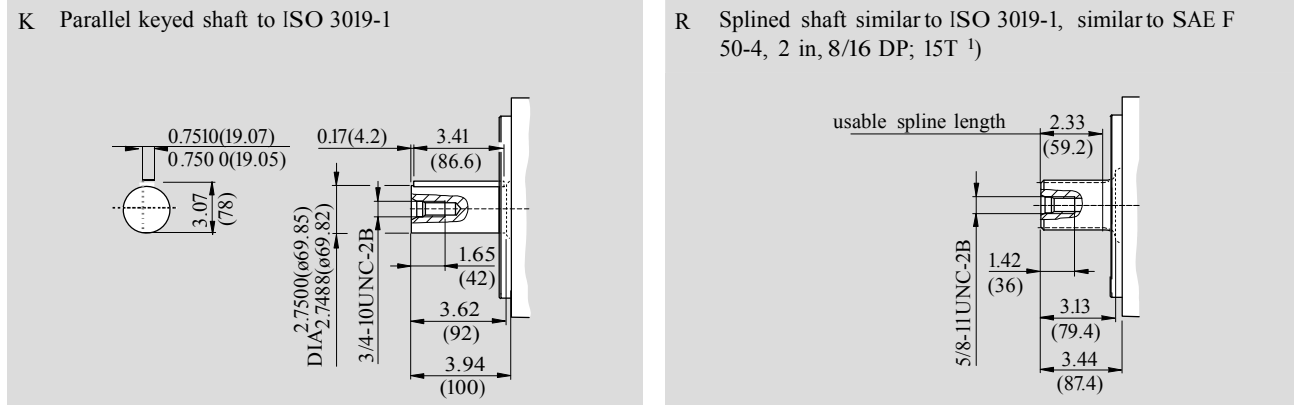
¹⁾ ANSI B92.1a-1976, 30° pressure angle, flat base, flank centering, fit class 5

²⁾ for the max. tightening torques please observe the manufacturer's information on the used fittings and the general information on page 64

Dimensions, size 355

Before finalising your design please request a certified installation drawing. Dimensions in inches (mm).

Shaft ends



Ports

max. tightening torque ²⁾

S	Suction port (standard pressure series)	SAE J518	3 in
	Mounting bolts	ISO 68	5/8-11UNC-2B; 1.14(29) deep ²⁾
K ₁ , K ₂	Flushing port	ISO 11926	1 5/8-12UN-2B; 0.79(20) deep (plugged) 700 lb-ft (960 Nm)
T	Drain	ISO 11926	1 5/8-12UN-2B; 0.79(20) deep (plugged) 700 lb-ft (960 Nm)
M _B	Gauge port outlet pressure	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged) 29 lb-ft (40 Nm)
M _S	Gauge port suction pressure	ISO 11926	7/16-20UNF-2B; 0.39(10) deep (plugged) 29 lb-ft (40 Nm)
R(L)	Fill + air bleed (case drain port)	ISO 11926	1 5/8-12UN-2B; 0.79(20) deep 700 lb-ft (960 Nm)
U	Flushing port	ISO 11926	3/4-16UNF-2B; 0.59(15) deep (plugged) 117 lb-ft (160 Nm)
M ₁ , M ₂	Gauge port control chamber pressure	DIN 3852	M18x1,5; 0.47(12) deep (plugged) 102 lb-ft (140 Nm)

on version 63

B	Pressure port (high pressure series)	SAE J518	1 1/2 in
	Mounting bolts	ISO 68	5/8-11UNC-2B; 1.14(29) deep ²⁾
B ₁	Additional port	ISO 11926	1 5/8-12UN-2B; 0.79(20) deep (plugged) 700 lb-ft (960 Nm)

on version 75

B	Pressure port (high pressure series)	SAE J518	1 1/2 in
	Mounting bolts	ISO 68	5/8-11UNC-2B; 1.14(29) deep ²⁾
B ₁	2 nd pressure port (high pressure series)	SAE J518	1 1/2 in (closed with blanking plate)
	Mounting bolts	ISO 68	5/8-11UNC-2B; 1.14(29) deep ²⁾

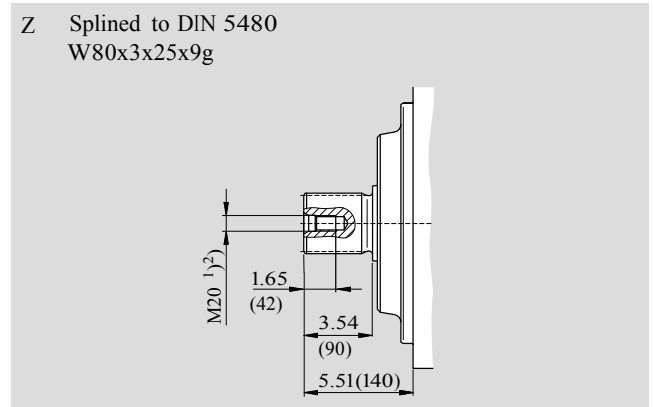
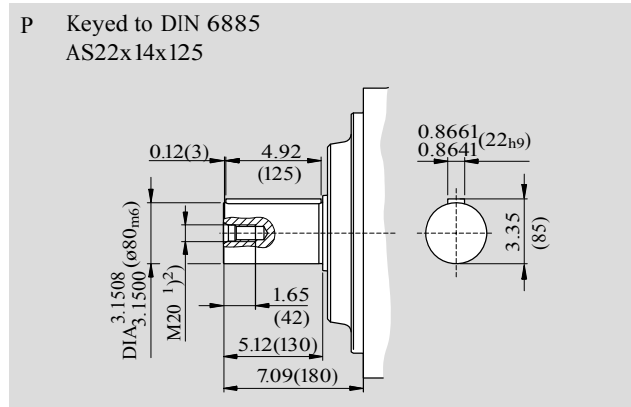
¹⁾ ANSI B92.1a-1976, 30° pressure angle, flat base, flank centering, fit class 5

²⁾ for the max. tightening torques please observe the manufacturer's information on the used fittings and the general information on page 64

Dimensions, size 500

Before finalising your design please request a certified installation drawing. Dimensions in inches (mm).

Shaft ends



Ports

Port	Description	Standard	Size	Depth	Max. tightening torque ²⁾
S	Suction port (standard pressure series) Mounting bolts	SAE J518 ³⁾ DIN 13	5 in M16x2;	0.94(24) deep ²⁾	
K ₁ , K ₂	Flushing port	DIN 3852	M48x2;	0.87(22) deep (plugged)	700 lb-ft (960 Nm)
T	Drain	DIN 3852	M48x2;	0.87(22) deep (plugged)	700 lb-ft (960 Nm)
M _B	Gauge port outlet pressure	DIN 3852	M18x1,5;	0.47(12) deep (plugged)	102 lb-ft (140 Nm)
M _S	Gauge port suction pressure	DIN 3852	M18x1,5;	0.47(12) deep (plugged)	102 lb-ft (140 Nm)
R(L)	Fill + air bleed (case drain port)	DIN 3852	M48x2;	0.87(22) deep	700 lb-ft (960 Nm)
U	Flushing port	DIN 3852	M18x1,5;	0.47(12) deep (plugged)	102 lb-ft (140 Nm)
M ₁ , M ₂	Gauge port control chamber pressure or dependent on control device	DIN 3852 DIN 3852	M18x1,5;	0.47(12) deep (plugged)	102 lb-ft (140 Nm)
B	Pressure port (high pressure series) Mounting bolts	SAE J518 ³⁾ DIN 13	2 in M20x2,5;	0.94(24) deep ²⁾	
B ₁	2 nd pressure port (high pressure series) Mounting bolts	SAE J518 ³⁾ DIN 13	2 in (closed with blanking plate) M20x2,5;	0.94(24) deep ²⁾	

¹⁾ Center bore to DIN 332 (thread to DIN 13)

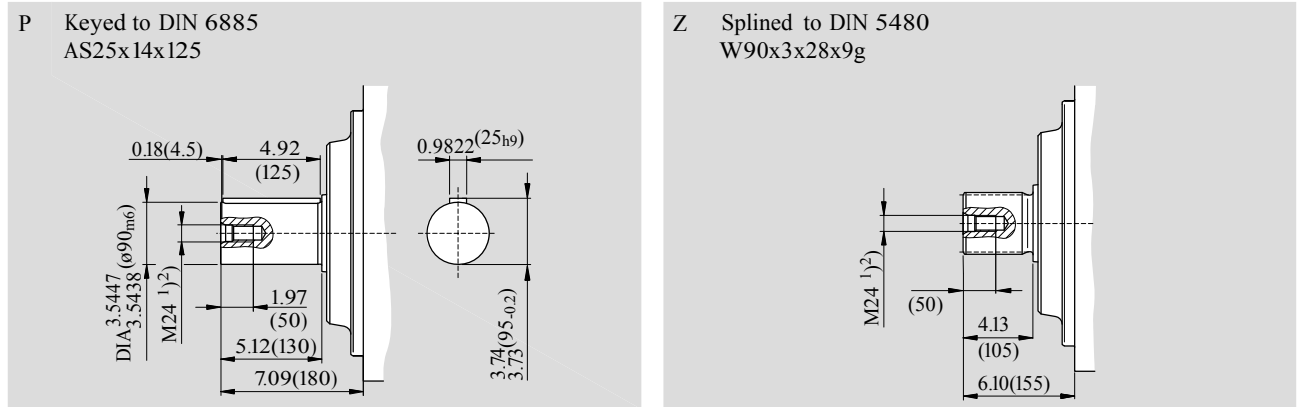
²⁾ for the max. tightening torques please observe the manufacturer's information on the used fittings and the general information on page 64

³⁾ Caution: metric thread deviates from standard

Dimensions, size 750

Before finalising your design please request a certified installation drawing. Dimensions in inches (mm).

Shaft ends



Ports

Port	Description	Standard	Dimensions	max. tightening torques ²⁾
S	Suction port (standard pressure series)	SAE J518 ³⁾	5 in	
	Mounting bolts	DIN 13	M16x2; 0.94(24) deep ²⁾	
K ₁ , K ₂	Flushing port	DIN 3852	M48x2; 0.79(20) deep (plugged)	700 lb-ft (960 Nm)
T	Drain	DIN 3852	M48x2; 0.79(20) deep (plugged)	700 lb-ft (960 Nm)
M _B	Gauge port outlet pressure	DIN 3852	M18x1,5; 0.47(12) deep (plugged)	102 lb-ft (140 Nm)
M _S	Gauge port suction pressure	DIN 3852	M18x1,5; 0.47(12) deep (plugged)	102 lb-ft (140 Nm)
R(L)	Fill + air bleed (case drain port)	DIN 3852	M48x2; 0.79(20) deep	700 lb-ft (960 Nm)
U	Flushing port	DIN 3852	M18x1,5; 0.47(12) deep (plugged)	102 lb-ft (140 Nm)
M ₁ , M ₂	Gauge port control chamber press. or dependent on control device	DIN 3852	M18x1,5; 0.47(12) deep (plugged)	102 lb-ft (140 Nm)
		DIN 3852	M14x1,5; 0.47(12) deep (plugged)	58 lb-ft (80 Nm)
B	Pressure port (high pressure series)	SAE J518 ³⁾	2 in	
	Mounting bolts	DIN 13	M20x2,5; 0.94(24) deep ²⁾	
B ₁	2 nd pressure port (high pressure series)	SAE J518 ³⁾	2 in (closed with blanking plate)	
	Mounting bolts	DIN 13	M20x2,5; 0.94(24) deep ²⁾	

¹⁾ Center bore to DIN 332 (thread to DIN 13)

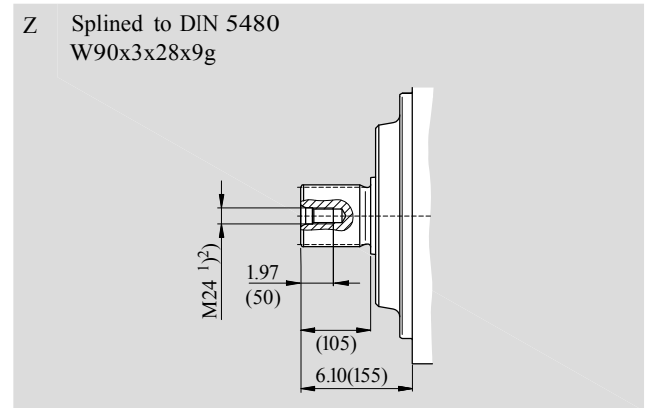
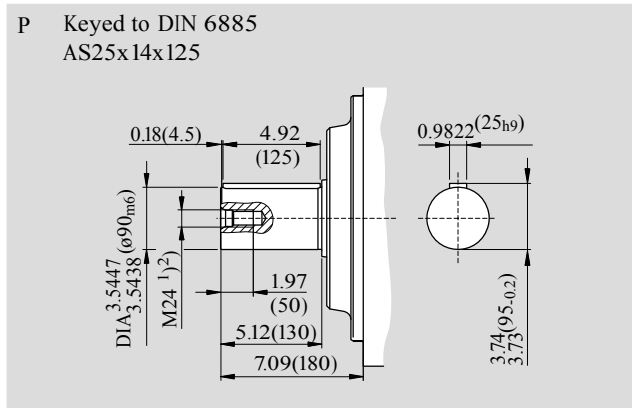
²⁾ for the max. tightening torques please observe the manufacturer's information on the used fittings and the general information on page 64

³⁾ Caution: metric thread deviates from standard

Dimensions, size 750 with boost pump (Impeller)

Before finalising your design please request a certified installation drawing. Dimensions in inches (mm).

Shaft ends



Ports

				max. tightening torque ²⁾
S	Suction port (standard pressure series) Mounting bolts	SAE J518 ³⁾ DIN 13	5 in M16x2; 0.94(24) deep ²⁾	
K ₁ , K ₂	Flushing port	DIN 3852	M48x2; 0.79(20) deep (plugged)	700 lb-ft (960 Nm)
T	Drain	DIN 3852	M48x2; 0.79(20) deep (plugged)	700 lb-ft (960 Nm)
M _B	Gauge port outlet pressure	DIN 3852	M18x1,5; 0.47(12) deep (plugged)	102 lb-ft (140 Nm)
M _S	Gauge port suction pressure	DIN 3852	M18x1,5; 0.47(12) deep (plugged)	102 lb-ft (140 Nm)
M _L	Gauge port boost pressure	DIN 3852	M18x1,5; 0.47(12) deep (plugged)	102 lb-ft (140 Nm)
R(L)	Fill + air bleed (case drain port)	DIN 3852	M48x2; 0.79(20) deep	700 lb-ft (960 Nm)
U	Flushing port	DIN 3852	M18x1,5; 0.47(12) deep (plugged)	102 lb-ft (140 Nm)
M ₁ , M ₂	Gauge port control chamber press. or dependent on control device	DIN 3852 DIN 3852	M18x1,5; 0.47(12) deep (plugged) M14x1,5; 0.47(12) deep (plugged)	102 lb-ft (140 Nm) 58 lb-ft (80 Nm)
B	Pressure port (high pressure series) Mounting bolts	SAE J518 ³⁾ DIN 13	2 in M20x2,5; 0.94(24) deep ²⁾	
B ₁	2 nd pressure port (high pressure series) Mounting bolts	SAE J518 ³⁾ DIN 13	2 in (closed with blanking plate) M20x2,5; 0.94(24) deep ²⁾	

¹⁾ Center bore to DIN 332 (thread to DIN 13)

²⁾ for the max. tightening torques please observe the manufacturer's information on the used fittings and the general information on page 64

³⁾ Caution: metric thread deviates from standard

Through drive

The axial piston unit (A)A4VSO can be equipped with a through drive, as shown in the type code on page 4. The through drive execution is designated by the code K/U 15...99.

We recommend, that no more than three pumps be coupled together.

Permissible input and through drive torques

Size		40	71	125	180	250	355	500	750	1000		
Splined shaft												
Max. perm. total input torque at shaft of pump 1												
(Pump 1 + pump 2)		$T_{tot\ max}$	lb-ft	329	583	1027	1478	2052	2133	4105	6157	8209
			Nm	(446)	(790)	(1392)	(2004)	(2782)	(2890)	(5566)	(8348)	(11130)
A Perm. through drive torque		$T_{D1\ max}$	lb-ft	164	291	513	739	1026	1457	2052	3078	4104
			Nm	(223)	(395)	(696)	(1002)	(1391)	(1976)	(2783)	(4174)	(5565)
B Perm. through drive torque		$T_{D2\ max}$	lb-ft	164	291	513	739	1026	675	2052	3078	4104
			Nm	(223)	(395)	(696)	(1002)	(1391)	(914)	(2783)	(4174)	(5565)
Keyed shaft												
Max. perm. total input torque at shaft of pump 1												
(Pump 1 + pump 2)		$T_{tot\ max}$	lb-ft	329	583	1027	1479	1889	2917	3835	5541	6965
			Nm	(446)	(790)	(1392)	(2004)	(2560)	(3952)	(5200)	(7513)	(9444)
A Perm. through drive torque		$T_{D1\ max}$	lb-ft	164	291	513	739	1026	1457	2052	3078	4104
			Nm	(223)	(395)	(696)	(1002)	(1391)	(1976)	(2783)	(4174)	(5565)
B Perm. through drive torque		$T_{D2\ max}$	lb-ft	164	291	513	739	863	1457	1783	2463	2860
			Nm	(223)	(395)	(696)	(1002)	(1169)	(1976)	(2417)	(3339)	(3879)
		$T_{D1\ max}$	lb-ft	164	291	513	739	863	1457	1783	2463	2860
			Nm	(223)	(395)	(696)	(1002)	(1169)	(1976)	(2417)	(3339)	(3879)
		$T_{D2\ max}$	lb-ft	164	291	513	739	1026	1457	2052	3078	4104
			Nm	(223)	(395)	(696)	(1002)	(1391)	(1976)	(2783)	(4174)	(5565)

Distribution of torques



Single pump with through drive

If no further pumps are factory-mounted the simple type code is sufficient.

included in this case are:

on all through drives except K/U 99

shaft coupler, mounting screws, seal and if required an adapter flange

on K/U 99

with through drive shaft, without shaft coupler, without adapter flange; unit is closed with pressure tight cover.

Universal through drive

On pump sizes 125...355 all through drives are supplied as universal through drives „U“.

These have the advantage, that they can be adapted later on.

Simply by exchanging the adapter flange and the shaft coupler it is possible to convert the through drive option.

The conversion sets must be ordered separately, see RE 95581.

Combination pumps

Independent circuits are available for the user when further pumps are built on.

1. If the combination consists of 2 Rexroth axial piston pumps, and if this must be factory mounted, the two individual type codes must be joined by a „+“.

Ordering example:

AA4VSO 125 DR / 30 R – PSD75U16 + AA4VSO 71 DR / 10 R – PSD63N00

2. If a gear or a radial piston pump must be factory mounted as the second pump please consult us.

Overview of (A)A4VSO through drive options

Through drive - (A)A4VSO			Mounting option 2. pump					Through drive
Flange	Coupler for splined shaft ⁶⁾	Code	(A)A4VSO/G size (shaft)	(A)A4CSG size (shaft)	(A)A10V(S)O/31(2) ⁵⁾ size (shaft)	A10V(S)O/52(3) size (shaft)	Gear and vane pump (shaft) cm ³ /rev	available on size
Flange SAE J 744 (ISO 3019-1)								
82-2 (A) ¹⁾	16-4 (5/8in, 9T) ³⁾	K/U01	–	–	–	–	AZ-PF-1X-(R) 004...028 ⁴⁾ PGH2/3(R) 5...16	40...750
	19-4 (3/4in, 11T) ³⁾	K/U52	–	–	18 (S)/31	10, 18 (S)	–	40...355
101-2 (B) ¹⁾	22-4 (7/8in, 13T) ³⁾	K/U68	–	–	28 (S)/31	28 (S)	AZ-PN-1X-(D) 020...036 ⁴⁾	40...500
	25-4 (1in, 15T) ³⁾	K/U04	–	–	45 (S)/31	45 (S)	PGH4-3X(R) 20...50	40...500
127-2 (C) ¹⁾	32-4 (1 1/4in, 14T) ³⁾	K/U07	–	–	71 (S)/31	–	PVV/Q4/5(J) 69...193	71...500
	38-4 (1 1/2in, 17T) ³⁾	K/U24	–	–	100 (S)/31	85 (S)	PGH5-3X(R) 63...250	125...500
127-4(C) ¹⁾	32-4 (1 1/4in, 14T) ³⁾	K/U15	40 (S)	–	71(S)32	–	–	40...355
	38-4 (1 1/2in, 17T) ³⁾	K/U16	71 (S)	–	–	–	–	71...355
152-4(D) ¹⁾	44-4 (1 3/4in, 13T) ³⁾	K/U17	125 (S)	–	140 (S)/31/32	–	–	125...500
	50-4 (2in, 15T) ³⁾	U78	180 (S)	–	–	–	–	180...355
165-4(E) ¹⁾	50-4 (2in, 15T) ³⁾	U18	250 (S)	250 (S)	–	–	–	250, 355
			355 (R)	355 (R)	–	–	–	355
Flange ISO 3019-2 (metric)								
80, 2-bolt	19-4 (3/4in, 11T) ³⁾	KB2	–	–	18 (S)/31	10 (S)	–	in preparation
100, 2-bolt	22-4 (7/8in, 13T) ³⁾	KB3	–	–	28 (S)/31	–	–	in preparation
	25-4 (1in, 15T) ³⁾	KB4	–	–	45 (S)/31	–	–	500
125, 2-bolt	32-4 (1 1/4in, 14T) ³⁾	KB5	–	–	71 (S)/31	–	–	in preparation
	38-4(1 1/2in, 17T) ³⁾	KB6	–	–	100 (S)/31	–	–	in preparation
125, 4-bolt	W 32x2x14x9g ²⁾	K31	40 (Z)	–	–	–	–	500
140, 4-bolt	W 40x2x18x9g ²⁾	K33	71 (Z)	–	–	–	–	500, 750
160, 4-bolt	W 50x2x24x9g ²⁾	K34	125 (Z)	–	–	–	–	500, 750
			180 (Z)	–	–	–	–	500, 750
	32-4 (1 1/4in, 14T) ³⁾	KB8	–	–	71 (S)/32	–	–	in preparation
180, 4-bolt	44-4 (1 3/4in, 13T) ³⁾	KB7	–	–	140 (S)/31/32	–	–	500
	38-4 (1 1/2in, 17T) ³⁾	KB9	–	–	100 (S)/32	–	–	in preparation
224, 4-bolt	W 60x2x28x9g ²⁾	K35	250 (Z)	250 (Z)	–	–	–	500, 750
	W 70x3x22x9g ²⁾	K77	355 (Z)	355 (Z)	–	–	–	500
315, 8-bolt	W 80x3x25x9g ²⁾	K43	500 (Z)	500 (Z)	–	–	–	500, 750
400, 8-bolt	W 90x3x28x9g ²⁾	K76	750 (Z)	750 (Z)	–	–	–	750
	W 100x3x32x9g ²⁾	K88	1000 (Z)	–	–	–	–	1000
Dia63-4, metr.	Keyed dia 25	K/U57	–	–	–	–	R4	40 a. 71

¹⁾ 2 = 2-bolt, 4 = 4-bolt

²⁾ to DIN 5480

³⁾ Splined shafts acc. to ISO 3019-1 (SAEJ744)

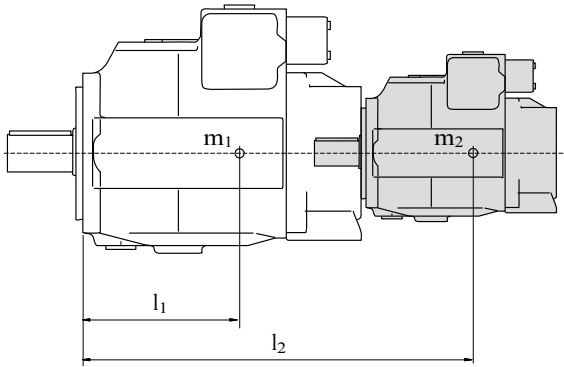
⁴⁾ Rexroth recommends special versions of the gear pumps. Please consult us.

⁵⁾ If a through drive for an A10V(S)O with R-shaft is desired, please consult us.

⁶⁾ Keyed shaft on through drive code K/U57

Permissible mass moment of inertia

referred to the mounting flange of the main pump



m_1, m_2 lbs (kg) Weight of pump

l_1, l_2 in (mm) Distance center of gravity

$$T_m = m_1 \cdot l_1 \cdot \frac{1}{12} + m_2 \cdot l_2 \cdot \frac{1}{12} \text{ [lb-ft]}$$

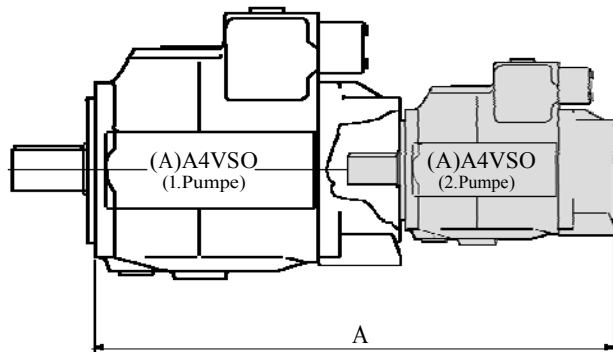
$$(T_m = m_1 \cdot l_1 \cdot \frac{1}{102} + m_2 \cdot l_2 \cdot \frac{1}{102} \text{ [Nm]})$$

Size			40	71	125	180	250	355	500	750	1000
Perm. mass moment of inertia	$T_{m \text{ perm.}}$	lb-ft (Nm)	1327 (1800)	1475 (2000)	3098 (4200)	3098 (4200)	6859 (9300)	6859 (9300)	11506 (15600)	14382 (19500)	14382 (19500)
Perm. mass moment at dynam. acceleration of $10 g \hat{=} 98,1 \text{ m/sec}^2$	$T_{m \text{ perm.}}$	lb-ft (Nm)	132 (180)	148 (200)	310 (420)	310 (420)	686 (930)	686 (930)	1151 (1560)	1438 (1950)	1438 (1950)
Weight (A4VSO...DR)	m	lbs (kg)	86 (39)	117 (53)	194 (88)	225 (102)	406 (184)	456 (207)	705 (320)	1041 (460)	1333 (605)
Distance center of gravity	l_l	in (mm)	4.72 (120)	5.51 (140)	6.69 (170)	7.08 (180)	8.26 (210)	8.66 (220)	9.05 (230)	10.23 (260)	11.41 (290)

Dimensions combination pumps

Before finalising your design please request a certified installation drawing. Dimensions in inches (mm).

(A)A4VSO + (A)A4VSO



Overall length A

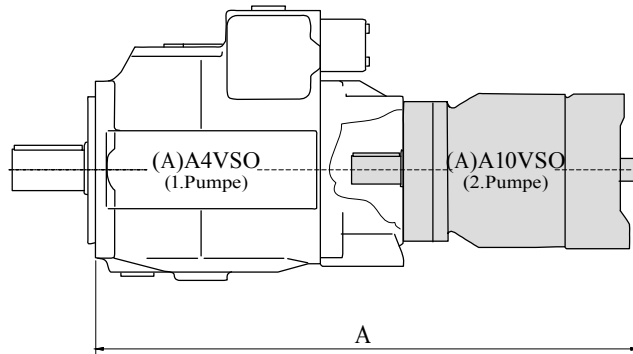
(A)A4VSO (1. pump)	(A)A4VSO..DR..N00(2. pump)								
	Size 40	Size 71	Size 125	Size 180	Size 250	Size 355	Size 500	size 750	Size 1000
Size 40	22.17(563)	-	-	-	-	-	-	-	-
Size 71	23.27(591)	24.41(620)	-	-	-	-	-	-	-
Size 125	25.16(639)	26.30(668)	29.17(741)	-	-	-	-	-	-
Size 180	26.10(663)	27.24(692)	30.12(765)	31.89(810)	-	-	-	-	-
Size 250	28.46(723)	29.61(752)	31.97(812)	33.78(858)	36.14(918)	-	-	-	-
Size 355	29.61(752)	30.75(781)	33.11(841)	34.92(887)	37.28(947)	38.44(976)	-	-	-
Size 500	30.35(771)	31.50(800)	33.86(860)	34.65(880)	38.43(976)	39.57(1005)	43.70(1110)	-	-
Size 750	32.32(821)	33.46(850)	35.83(910)	36.61(930)	40.39(1026)	41.54(1055)	45.67(1160)	47.80(1214)	-
Size 1000	*	*	*	*	*	*	*	*	53.86(1368)

* on request

Dimensions combination pumps

Before finalising your design please request a certified installation drawing. Dimensions in inches (mm).

(A)A4VSO + (A)A10VSO



Overall length A

(A)A4VSO (1. pump)	(A)A10VSO.../31 (2. pump)					
	Size 18	Size 28	Size 45	Size 71	Size 100	Size 140
Size 40	18.11(460)	19.61(498)	20.31(516)	–	–	–
Size 71	20.16(512)	20.87(530)	21.57(548)	22.83(580)	–	–
Size 125	22.28(566)	22.72(577)	23.43(595)	24.72(628)	27.56(700)	–
Size 180	23.23(590)	23.66(601)	24.37(619)	25.67(652)	28.50(724)	29.33(745)
Size 250	25.59(650)	26.02(661)	26.73(679)	28.03(712)	30.87(784)	31.18(792)
Size 355	*	*	27.87(708)	29.17(741)	*	32.32(821)
Size 500	27.56(700)	27.99(711)	28.70(729)	30.08(764)	33.74(857)	34.17(868)
Size 750	29.53(750)	29.96(761)	30.67(779)	31.97(812)	35.71(907)	36.10(917)
Size 1000	*	*	*	*	*	*

* on request

Details model of A4VSO pump			
R902408952	AA4VSO180EO2/30R-PPB13N00	R902408444	A4VSO750HS3/30R-PZH25N00
R902408788	AA4VSO125EO2/30R-PPB13N00	R902408445	A4VSO1000HS3/30R-PZH25N00
R902408078	AA4VSO355DRG/30R-PPB13N00	R910903578	A4VSO40LR2/10R-PPB13N00
R902407830	AA4VSO355EO2/30R-PPB25N00	R910904555	A4VSO71LR2/10R-PPB13N00
R902405908	AA4VSO180MA/30R-PPB13N00	R910905022	A4VSO71LR2G/10R-PPB13N00
R902405180	AA4VSO355HD1/30R-PPB13N00	R910905023	A4VSO40LR2G/10R-PPB13N00
R902404305	AA4VSO125DR/30L-PPB13N00	R910974769	A4VSO250DR/30R-PPB13N00
R902404170	AA4VSO180DR/30R-VPB13N00	R910976951	A4VSO250DP/30R-PPB13N00
R902404123	AA4VSO125LR2/30R-PPB13N00	R910976965	A4VSO250DRG/30R-PPB13N00
R902404121	AA4VSO180DRG/30R-PPB13N00	R910977295	A4VSO250LR2G/30R-PPB13N00
R902404027	AA4VSO125DRG/30R-PPB13K33	R910978355	A4VSO250LR2N/30R-PPB13N00
R910999906	A4VSO180LR2/30R-PPB13N00	R910984242	A4VSO250HS3/30R-PPB13N00
R910999730	A4VSO125LR2N/30R-PPB13N00	R910985297	A4VSO250LR2/30R-PPB13N00
R910999125	A4VSO180DR/30R-PPB13N00	R910985509	A4VSO250DFR/30R-PPB13N00
R910998618	A4VSO180DFR/30R-PPB13N00	R910993150	A4VSO1000LR3N/30R-PZH25N00
R910985509	A4VSO250DFR/30R-PPB13N00	R910994306	A4VSO125DR/30R-PPB13N00
R910985297	A4VSO250LR2/30R-PPB13N00	R910997490	A4VSO250LR3N/30R-PPB25N00
R910978355	A4VSO250LR2N/30R-PPB13N00	R910998618	A4VSO180DFR/30R-PPB13N00
R910976965	A4VSO250DRG/30R-PPB13N00	R910998645	A4VSO125DRG/30R-PPB13N00
R910974769	A4VSO250DR/30R-PPB13N00	R910998987	A4VSO500HS3/30R-PPH25N00
R910904555	A4VSO71LR2/10R-PPB13N00	R910999045	A4VSO355HS3/30R-PPB13N00
R902404903	A4VSO125DFR/30R-PPB13N00	R910999125	A4VSO180DR/30R-PPB13N00
R902404123	A4VSO125LR2/30R-PPB13N00	R910999362	A4VSO125DR/30R-VPB13N00
R902404121	A4VSO180DRG/30R-PPB13N00	R910999730	A4VSO125LR2N/30R-PPB13N00
R902404123	A4VSO125LR2/30R-PPB13N00	R910999783	A4VSO125LR2G/30R-PPB13N00
R902404894	A4VSO125DP/30R-PPB13N00	R910999797	A4VSO125LR2D/30R-PPB13N00
R902404903	A4VSO125DFR/30R-PPB13N00	R910999867	A4VSO180LR2G/30R-PPB13N00
R902405180	A4VSO355HD1/30R-PPB13N00	R910999906	A4VSO180LR2/30R-PPB13N00
R902408441	A4VSO355LR3N/30R-PPB25N00	R910999934	A4VSO180LR2N/30R-PPB13N00
R902408442	A4VSO500LR3N/30R-PPH25N00	R910999125	A4VSO180DR/30R-PPB13N00
R902408443	A4VSO750LR3N/30R-PZH25N00	R902406427	AHAA4VSO250HD1BT/30R-PKD63K22
R902400840	AA4VSO355EO2/30R-PKD63K52	R902406429	AHAA4VSO250DRG/30R-PKD63K22
R902420976	A4VSO500DR/30R-PPH25N00	R902406430	AHAA4VSO250LR2G/30R-PKD63N00